Australian Code of Practice on Disinformation and Misinformation
Adobe, Inc.
Annual Transparency Report
January 2022 – December 2022

Summary

Adobe is pleased to continue its participation in the Australian Code of Practice on Disinformation and Misinformation.

Adobe is a global leader in digital marketing and digital media solutions. Since the company's foundation in December 1982, we have pushed the boundaries of creativity with products and services that allow our customers to create, deploy, and enhance digital content. Our purpose is to serve the creator and respect the consumer, and our heritage is built on providing trustworthy and innovative solutions to our customers.

With the increasing volume and velocity of digital content creation, including synthetic media, it is critical to ensure transparency, understanding, and trust in what we are consuming online while empowering consumers. Adobe feels a responsibility to support the creative community, and society at large, and is committed to finding solutions that help address the issues of manipulated media and tackle misinformation and disinformation.

As such, content provenance is a major focus for Adobe and the work we lead on the Content Authenticity Initiative (CAI). We are focused on cross-industry participation, with an open, extensible approach for providing media transparency to allow for better evaluation of content.

The CAI advocates for a set of open standards that can be used to create and reveal provenance for images, documents, time-based media (video, audio) and streaming content. Provenance, sometimes referred to as attribution, empowers content creators, editors, and publishers, regardless of their geographic location or degree of access to technology, to voluntarily disclose information about who created or changed an asset, what was changed and how it was changed.

In February 2021, Adobe, Arm, BBC, Intel, Microsoft, and Truepic launched a formal coalition for standards development: The Coalition for Content Provenance and Authenticity (C2PA). The C2PA is a mutually governed consortium created to accelerate the pursuit of pragmatic, adoptable standards for digital provenance, serving creators, editors, publishers, media platforms, and consumers.

In January 2022, the C2PA publicly released the open technical specification for digital provenance, which provides platforms with a blueprint to define what information is associated with each type of asset (e.g. images, videos, audio, or documents), how that information is presented and stored, and how evidence of tampering can be identified.

We have made great strides in the past year to advance the implementation and adoption of this important technology and we welcome the opportunity to share these updates in this transparency report.

Summary of Adobe's Commitments under the Code (*see all commitments in appendix*)

Objective 1 Safeguards against Disinformation and Misinformation: Outcome 1a: Signatories contribute to reducing the risk of Harms that may arise from the propagation of Disinformation and Misinformation on digital platforms by adopting a range of scalable measures. **Specifically measures implemented under 5.9:** H. the provision or use of technologies which assist digital platforms or their users to check authenticity or accuracy or to identify the provenance or source of digital content; I. exposing metadata to users about the source of content;
Objective 3 Work to ensure the integrity and security of services and products delivered by digital platforms: Outcome 3: The risk that Inauthentic User Behaviours undermine the integrity and security of services and products is reduced. Please see Objective 1a.
Objective 4 Empower consumers to make better informed choices of digital content: Outcome 4: Users are enabled to make more informed choices about the source of news and factual content accessed via digital platforms and are better equipped to identify Misinformation. 5.21. Signatories will implement measures to enable users to make informed choices about Digital Content and to access alternative sources of information. Specifically, measures developed and implemented in accordance with the commitment: C. the provision or use of technologies which signal the credibility of news sources, or which assist digital platforms or their users to check the authenticity or accuracy of online news content, or to identify its provenance or source; D. the promotion of digital literacy interventions, informed by evidence or expert analysis Please also see Objective 1a.

Objective 6 Strengthen public understanding of Disinformation and Misinformation through support of strategic research: Outcome 6: Signatories support the efforts of independent researchers to improve public understanding of Disinformation and Misinformation.
Objective 7 Publicise the measures we take to combat Disinformation: Outcome 7: The public can access information about the measures Signatories have taken to combat Disinformation and Misinformation.

Following the Code's guidance on signatories nominating to report on specified provisions in the Code, we have again this year reported on measures that are "proportionate and relevant" to our business. Adobe has considered the Code's guiding principles and the context in which our products and services might to contribute to the harms arising from the spread of disinformation and misinformation on online platforms.

Adobe produces content creation and editing tools to help individuals and enterprises accelerate their productivity as they create, publish, and promote their creative work. While some of our products – most notably Behance – allow users to share, showcase, and promote their content online, Adobe is not a social media company. None of our products facilitate global conversations about current events or allow users to share and disseminate news content to global audiences. We believe digital creative works – the primary purpose of Adobe's suite of products – and any associated harms that stem from them are not the focus of the Code.

While Adobe's products and services fall outside the scope of the Code, we share the expressed concerns about harms that may result from malicious actors using our tools to produce inaccurate digital content. Therefore, we have opted into the provisions of the Code that focus on technologies we are developing to help users authenticate online media. To help mitigate the negative impact of misinformation and disinformation, Adobe is focused on providing tools to digital platforms that can help their users determine the sources and authenticity of online content.

Reporting against commitments

Outcome 1a: Reducing harm by adopting scalable measures

In 2022 we have continued to see an upward trend of progress in the provision of provenance technology to help users check the authenticity or accuracy or to identify the provenance or source of digital content, including the exposure of metadata about the source of content.

At Adobe we have focused on four core areas to meet this Commitment.

1. Sharing open-source code with the community to help support adoption of provenance.
2. Implementing provenance technology in Adobe products so that our millions of customers can use this technology to show metadata about content created.

3. Providing a resource for audiences everywhere to check for provenance and attribution history.
4. Supporting CAI members with their integration of provenance using the open-source code and the C2PA standard.

1. Open-source tools released:

In June 2022, Adobe released a suite of open-source developer tools based on the C2PA specification, enabling more developers to integrate content provenance across web, desktop, and mobile projects — for free. This is helping to get provenance tools into the hands of millions of creators and developers to create a safer, more transparent digital ecosystem, while providing users with information to be better informed about the content they see online.

Our team supports three options for open-source tools to implement C2PA standards beyond just Adobe apps. These tools include options from lightweight JavaScript to read Content Credentials on your site or app to completely customisable tools with the full SDK. Building on from our original release of the open-source tools, in early 2023 we updated them and now include both documentation and quicker file processing time to improve the developer experience. In addition to support for selected video and audio formats, and mobile development, as we continue to explore how we can expand content provenance to new mediums. Since the open-source tools were first published they have been downloaded over 8200 times.

2. Provenance tool available in Photoshop:

Adobe has used the C2PA technical standard published in early 2022 and launched a provenance feature in its flagship creative media tool, Photoshop, called Content Credentials ("Content Credential(s)"), in private beta in 2021. In October 2022 we announced further improvements, and it is now available, for free, to millions of Photoshop subscribers (individual and enterprise) globally as an opt-in feature. When enabled, the Content Credential captures edits and identity information from a working image. A user can then attach this to the image when exporting it. This secure metadata provides new transparency options for creative professionals and photojournalists, and anyone making digital content, while also reinforcing trust in digital content for the people viewing it. More information is available here.

Also in October 2022, we announced the new Content Credentials cloud, where users can publish their Content Credentials (provenance and edit history) which enables search and recovery so that audiences can see the original Content Credentials, even if they have been maliciously or accidentally stripped off. Exporting to Content Credentials cloud allows the provenance of any creator's work to be permanently available for cases where metadata is removed or damaged, strengthening creator attribution. This feature, along with all Content Credentials functionality, is provided free of charge.

Additionally, Adobe Stock, which supplies hundreds of thousands of assets to customers daily, has adopted Content Credentials to provide provenance data for all image assets, and Behance, Adobe's community platform for creators, displays Content Credentials so that viewers of Behance content can understand its origins and context.

We are working hard in 2023 to raise more awareness of this opt-in feature and explain its important role in helping users check the authenticity of digital content. We are doing this through numerous creator audience engagement events, marketing, and media activations. We also have plans to integrate Content Credentials in other Adobe products in 2023, including imaging, video, and 3D offerings.

3. Provenance for audiences everywhere:

The Adobe team has also developed Verify, a website where users can see important provenance information about a piece of digital content. When false narratives or misleading information go viral, we often "Google" to compare coverage and cross-check available information. This common behaviour and digital provenance history drive Verify, where anyone can upload an image or video to trace the history and edits made.

In October 2022, we updated the website to support the search and recovery of provenance and attribution history utilising the Content Credentials cloud. This allows for the ground-breaking ability to ensure Content Credentials are permanently associated with your content, no matter where it travels.

4. Supporting implementation

CASE STUDY 1: LEICA AND NIKON

Throughout 2022, Adobe partnered with two industry-leading camera manufacturers, Leica and Nikon, to integrate provenance technology into their camera hardware, using both the C2PA standard, and our open-source developer tools. These devices were exhibited in October 2022 at the Adobe MAX conference.

This partnership implements provenance technology into two cameras: Leica's iconic M11 Rangefinder and Nikon's industry-leading mirrorless camera, the Nikon Z9, enabling their global customer base to attach provenance to their images at the point of capture, creating a chain of authenticity from camera to cloud. Further information on this exciting partnership is available in our press release and blog.

This milestone will allow photographers and creators alike to increase trust in their digital work by securely attaching valuable provenance information at the point of capture, including when, where and how each image was created. These details establish an image's attribution and trustworthiness from the start, which helps protect against the spread of misinformation by empowering consumers to identify the origins and edit history throughout the digital content lifecycle.

We are excited and proud of this partnership as it shows this open standard technology can be implemented in both software and hardware. It was also relatively straightforward to do with low resource and time needed, which is encouraging for the goal of ubiquitous adoption across the eco-system, including relevant signatories of the Code of Practice.

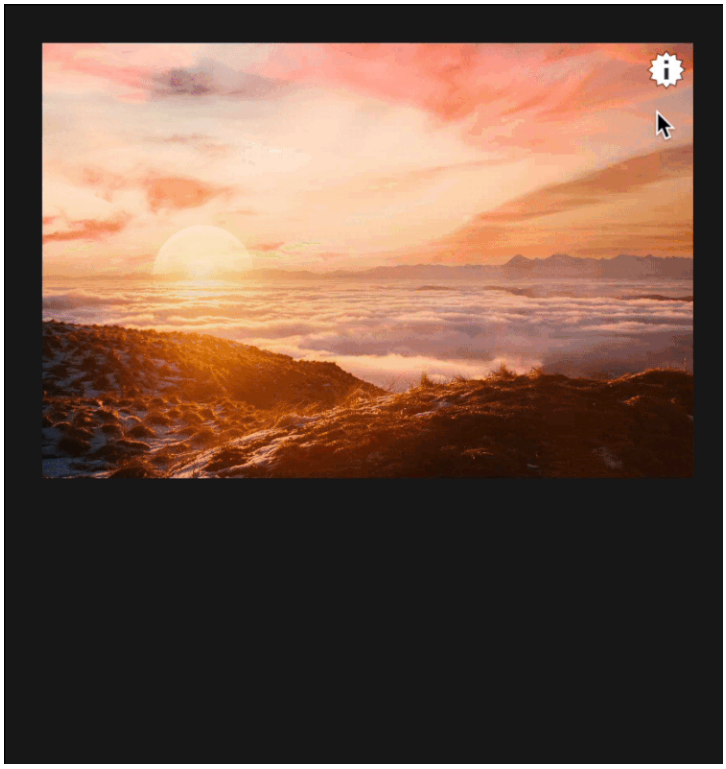
CASE STUDY 2: PIXELSTREAM

In 2022 Tim Murphy and Erin Oberhauser, co-founders of Pixelstream, were at the forefront of developer implementation with the CAI open-source tools we published in June of that year. They explored how to authenticate content with automation, user experience and security at the product's core.

Pixelstream is a version-controlled sharing platform for authentic media. Essentially, GitHub for authentic media assets, but it is built on top of C2PA tooling instead of Git. This allows you to share media with your team or with the entire world while leveraging the transparency, attribution, and trust you get with C2PA.

Sharing on Pixelstream is different from posting something to social media, though. When you publicly share your content on Pixelstream, people and organisations can "fork" the media from any point in its provenance. This means they can make edits to their copy using full resolution assets right on Pixelstream or with software like Photoshop.

A full write up of an interview with the co-founders and their implementation journey and motivation to expand authentication access, help build trust and transparency online can be read here. This also includes video visuals of the implementation such as below.



Objective 3: Work to ensure the integrity and security of services and products delivered by digital platforms.

In addition to the upward trend of progress explained in detail in Objective 1a, it is also worth noting the tangible progress in the two organisations which underpin the eco-systems' efforts on content provenance which Adobe has taken a very active role in.

The Content Authenticity Initiative (CAI) which was launched in late 2019 is an Adobe-led initiative with more than 1200 (as at May 2023 and was ~900 at the end of 2022) partners working to increase trust online through provenance, which are the facts about the origins of a piece of digital content. We welcomed many new CAI members in 2022—leading publishers and visual content providers including the Associated Press, Agencia EFE, El Tiempo, EPA Images, Reuters and the Wall Street Journal to name a few. We also have ~20 members from Australia and will be looking to increase this in the coming years.

Internally, at Adobe we have a team of full-time employees dedicated to working on CAI. This includes engineers helping to develop and maintain our open-source tooling for the community, user-experience designers, and a team dedicated to recruiting partners, supporting adoption and growing the community globally.

In addition, Adobe is an active member of the independent standards organisation, the Coalition of Content Provenance and Authenticity, and sits on the Steering Committee which meets weekly, Chairs the Technical Working Group and has representatives on the Threats and Harms Task Force, plus support from Adobe employees from our Communications and Policy team for C2PA external engagement. We are committed to working with other C2PA members such as Microsoft, BBC, ARM, Intel and Sony to ensure open technical specifications for provenance are maintained to the highest standards and used to implement content provenance across the eco-system in a manner that is interoperable and ultimately adopted by international standards organisations as the single, unified way to address disinformation by empowering users with transparency.

Objective 4: Empower consumers to make better informed choices of digital content.

As mentioned above, the mission of the work Adobe is leading in tackling mis/disinformation is focused on supporting the provision of tools to help consumers make better informed decisions about the content they are consuming online.

As more and more CAI members adopt provenance technology and creators and media publishers use the technology to disclose details about how their content is made and altered, we will have an increasing amount of provenance-enabled content available so that consumers can check the veracity of content.

To date, we know over 1.4M assets have been created with Content Credentials using Adobe products.

Of course, we recognise that media literacy is a vital component of the fight to tackle mis/disinformation. Throughout 2022, Adobe worked with educational experts to prepare curricular materials for middle, high school and university students around media literacy

and best practices to help young people navigate the increasingly confusing media landscape. Initially designed for the US, we are now exploring regionalising this material, as appropriate.

These materials will go online in May 2023 on EdEx - https://edex.adobe.com/ a free education platform, and will be available for use by educators and students globally.

Objective 6: Strengthen public understanding of Disinformation and Misinformation through support of strategic research.

In 2022, Adobe commissioned Washington University in the United States to carry out research which has been undertaken with the University's Department of Computer Science and Engineering which investigated consumer perceptions of provenance signals. This research has not been published externally.

In addition, in 2022, Adobe User Experience research team also carried out UX studies around provenance interventions and their efficacy. Three studies were undertaken: one on creators' and consumers' trust signals, one on the Content Credentials workflow in Photoshop, and a final large-scale study on consumers' understanding and use of Content Credentials within a photo-based social media app. A summary of this research will be published in 2023.

Adobe's User Experience research team continues to liaise with various external academic research partners conducting research into provenance, online trust, and visual media. In addition, we will continue to fund more research in 2023.

Objective 7: Signatories will publicise the measures they take to combat Disinformation.

Adobe has consistently published details of all the major milestones noted in Objective 1a. which link to Adobe blog pages. In addition, the CAI regularly posts blogs updating the community of progression of our mission and has recordings of the quarterly community webinars on the CAI website. In 2023 the cadence of these events is monthly with a focus on the three core audiences of implementors, creators and thought leaders.

We are leading the effort to publicly promote these efforts so we can educate everyone, including content creators, content curators, consumers, and media users on the importance of content provenance. We have hosted events and briefings in the US, Europe, and Australia to advance this effort. And we are committed to raising awareness in photojournalism schools as well as K-12 schools so we can increase digital literacy and improve online safety.

We are also continually communicating with government leaders and policymakers about the benefits of content provenance and the importance of educating consumers, including significant policy collaboration and developments in Europe and the United States in 2022.

In June, we achieved a milestone of collaborating with the European Commission's 2022 Code of Practice on Disinformation, the first international code to specifically include

commitments on provenance and the C2PA standard. The code aims to encourage adoption by signatories which include Adobe, Google, Meta, Microsoft, TikTok and others.

An Adobe sponsored bill in the State of California will establish a Deepfake Working Group to study the risks and impact of digitally altered media while exploring the adoption of content provenance as a solution to identify deepfakes.

The CAI team also spoke at a number of policy events internationally, including a policy workshop at the Royal Society in London in September. This event was a deep dive into the recommendation from its report on disinformation on provenance technology (pp.16) where Andy Parsons, Sr. Director at the CAI, addressed an audience of ~50 stakeholders from academia, technology and policy alongside CAI and C2PA member, the BBC.

Concluding remarks

Addressing the issue of content authenticity at scale to tackle mis/disinformation is a long-term, interdisciplinary, collaborative mission. As demonstrated in this year's report, the work Adobe is undertaking with its own products, and the efforts we are leading with the CAI community and our active role in the C2PA is beginning to show real and meaningful progress. 2022 was a year of critical foundation-building for us and we see 2023 as the year of utility and adoption, built upon that foundation.

Globally, we are constantly working to expand and diversify the membership of both CAI and C2PA and increase support among stakeholders for the standard. These efforts include encouraging software companies, device manufacturers, publishers, and social media platforms to adopt content provenance solutions to expose a wider range of consumers to these tools.

Specifically, in Australia, our goal over the next year is to continue to educate media outlets and journalists on the value of CAI so they can embed the tools into their work, and to continue to socialise the C2PA standard with policy makers and stakeholders.

And this work is more essential than ever before with the arrival of mainstream generative AI. We are already seeing in 2023 the implications of this new technology and how content authenticity can and will be a significant part of this new era of innovation. The democratisation of use and scale of accessibility to these tools will have implications for how we tackle mis/disinformation.

As we will no doubt report on more in next year's report, in March 2023 Adobe's new generative AI model, Firefly, was announced, and along with it our commitment to leverage CAI Content Credentials to bring transparency to generative AI outputs. Every asset produced with Firefly has embedded a Content Credential indicating the model used and its version. This is significant—it not only builds on our mission to ensure tools like Firefly are used responsibly, but also gives viewers of this content important context to understand what they're seeing or hearing, enabling them to make trust decisions when necessary. We're so excited for the year ahead, continuing to co-create an ecosystem built on trust and grounded in open technologies that enable creator attribution and digital transparency.

Appendix

Business and Content Context
Approach to Disinformation and Misinformation

- Objective 1: Safeguards against Disinformation and Misinformation
- Outcome 1a: Reducing harm by adopting scalable measures
- Outcome 1b: Inform users about what content is targeted
- Outcome 1c: Users can easily report offending content
- Outcome 1d: Information about reported content available
- Objective 2: Disrupt advertising and monetisation incentives for disinformation.
- Objective 3: Work to ensure the integrity and security of services and products delivered by digital platforms.
- Objective 4: Empower consumers to make better informed choices of digital content.
- Objective 5: Improve public awareness of the source of political advertising carried on digital platforms.
- Objective 6: Strengthen public understanding of Disinformation and Misinformation through support of strategic research.
- Objective 7: Signatories will publicise the measures they take to combat Disinformation.
- Concluding remarks